

WHAT IS CLAIMED IS:

Sub A 1. A process of emulsifying alkenyl succinic anhydride size comprising blending an alkenyl succinic anhydride and a starch grafted cationic acrylamide co-polymer under conditions sufficient to form an emulsion.

2. The process of claim 1 wherein said alkenyl succinic anhydride is mixed with a surfactant prior to forming said emulsion.

Sub B 3. The process of claim 2 wherein said surfactant is sodium dioctyl sulfosuccinate.

4. The process of claim 1 wherein said starch grafted cationic acrylamide co-polymer comprises from about 10 to about 90 wt% of a starch monomer and from about 10 to about 90 wt% of an acrylamide monomer, based on the total weight of starch and acrylamide.

5. The process of claim 4 wherein said starch grafted cationic acrylamide co-polymer comprises from about 25 to about 75 wt% of said starch monomer and from about 25 to about 75 wt% of said acrylamide monomer, based on the total weight of starch and acrylamide.

Sub A 6. The process of claim 1 wherein said alkenyl succinic anhydride and said starch grafted cationic acrylamide co-polymer are blended at a weight ratio of alkenyl succinic anhydride to starch grafted cationic acrylamide of from about 0.01:1 to about 1:1.

7. The process of claim 6 wherein said weight ratio is from about 0.02:1 to about 0.2:1.

8. An emulsified alkenyl succinic anhydride size produced by the process of claim 1.

9. A paperboard prepared using the emulsified alkenyl succinic anhydride size of claim 8.

10. Paper prepared using the emulsified alkenyl succinic anhydride size of claim 8.